



CALS TEST NETWORK

# AFCTN Test Report 94-019

AFCTB-ID  
93-052



## Technical Publication Transfer

Using:



Gateway Conversion Technology's  
Data



MIL-M-28001A (SGML)  
MIL-R-28002A (Raster)



Quick Short Test Report



21 May 1993

DISTRIBUTION STATEMENT A

Approved for public release

Distinction Unlimited



Prepared for

DTIC QUALITY INSPECTED 3

Electronic Systems Center

19960822 159

**Technical Publication Transfer**  
**Using:**  
**Gateway Conversion Technology's Data**

**MIL-M-28001A (SGML)**  
**MIL-R-28002A (Raster)**

**Quick Short Test Report**

**21 May 1993**

---

**Prepared By**

Air Force CALS Test Bed  
Wright-Patterson AFB, OH 45433

**AFCTB Contact**

Gary Lammers  
(513) 427-2295

**AFCTN Contact**

Mel Lammers  
(513) 427-2295

**DTIC QUALITY INSPECTED 3**

## DISCLAIMER

This document was prepared as an account of the work sponsored by the Air Force. Neither the United States Government, the Air Force, nor any of their employees makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, nor represents that its use would not infringe on privately owned rights. Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the Air Force. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or the Air Force, and shall not be used for advertising or product endorsement purposes.

Available to the public from the  
National Technical Information Service  
U.S. Department of Commerce  
5285 Port Royal Road  
Springfield, VA 22161

This report and those involved in its preparation do not endorse any product, process, or company stated herein. Use of these means by anyone does not imply certification by the Air Force Air Force CALS Test Network (AFCTN).

---

---

## Contents

1.	Introduction.....	1
1.1.	Background.....	1
1.2.	Purpose.....	2
2.	Test Parameters.....	3
3.	1840A Analysis.....	5
3.1.	External Packaging.....	5
3.2.	Transmission Envelope.....	5
3.2.1.	Tape Formats.....	5
3.2.2.	Declaration and Header Fields.....	5
4.	IGES Analysis.....	6
5.	SGML Analysis.....	6
6.	Raster Analysis.....	9
7.	CGM Analysis.....	10
8.	Conclusions and Recommendations.....	11
9.	Appendix A - Tapetool Report Logs.....	12
9.1.	Tape Catalog.....	12
9.2.	Tape Evaluation Log.....	13
9.3.	Tape File Set Validation Log.....	16
10.	Appendix B - Detailed SGML Analysis.....	19
10.1.	Parser Log.....	19
10.2.	Exoterica XGMLNormalizer Parser.....	20
10.3.	Exoterica Validator Log.....	21

---

---

10.4. Public Domain sgmls Log.....	23
11. Appendix D - Detailed Raster Analysis.....	24
11.1. File D001R002.....	24
11.1.1. Output HiJaak for Windows.....	24
11.2. File D001R003.....	25
11.2.1. Output HiJaak for Windows.....	25
11.3. File D001R004.....	26
11.3.1. Output HiJaak for Windows.....	26
11.4. File D001R005.....	27
11.4.1. Output HiJaak for Windows.....	27
11.5. File D001R006.....	28
11.5.1. Output HiJaak for Windows.....	28
11.6. File D001R007.....	29
11.6.1. Output HiJaak for Windows.....	29
11.7. File D001R008.....	30
11.7.1. Output HiJaak for Windows.....	30
11.8. File D001R009.....	31
11.8.1. Output HiJaak for Windows.....	31
11.9. File D001R010.....	32
11.9.1. Output HiJaak for Windows.....	32

## **1. Introduction**

### **1.1 Background**

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Gateway Conversion Technology's interpretation and use of the CALS standards, in transferring technical publication data. Gateway Conversion used its CALS Technical Data Interchange System to produce data in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

---

## 2. Test Parameters

Test Plan: AFCTB 93-052

Date of  
Evaluation: 21 May 1993

Evaluator: George Elwood  
Air Force CALS Test Bed  
DET 2 HQ ESC/AV-2P  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

Data  
Originator: Suzy Wharam  
Gateway Conversion Technology  
4709 Creekstone Drive  
Suite 300  
Morristown NC 27560  
(919) 319-6500

Data  
Description: Technical Manual Test  
1 Document Declaration file  
1 Document Type Definition (DTD)  
1 Text/Standard Generalized Mark-up Language  
(SGML) file  
9 Raster files

Data  
Source System:

1840

**HARDWARE**

Unknown

**SOFTWARE**

AFCTN Tapetool v1.2.8

Text/SGML

**HARDWARE**

Unknown

**SOFTWARE**

SoftQuad



Raster

**HARDWARE**

Unknown

**SOFTWARE**

Unknown

**Evaluation Tools Used:**

**MIL-STD-1840A (TAPE)**

SUN 3/280

AFCTN Tapetool v1.2.8 UNIX

XSoft CAPS/CALS v40.4

Texas Instruments (TI) Tapetool v1.0.1

PC 486/50

AFCTN Tapetool v1.2.9 DOS

**MIL-M-28001 (SGML)**

SUN SparcStation 2

ArborText ADEPT v4.2.1

PC 486/50

Exoterica XGMLNormalizer v1.2e3.2

Exoterica Validator v2.0 EXL

McAfee & McAdam Sema Mark-it v2.3

Public Domain sgmls

**MIL-R-28002 (Raster)**

SUN SparcStation 2

ArborText g42tiff

XSoft CAPS ccitt2caps v6.0x

Carberry CADLeaf Plus v3.1

AFCTN validg4

AFCTN calstb.475

IGES Data Analysis (IDA) IGESView v3.0

Island Graphics IslandPaint v3.0

PC 486/50

AFCTN validg4

IDA IGESView Windows

Inset Systems HiJaak v2.1

Inset Systems HiJaak Window v1.0

Software Publishing Corporation

(SPC) Harvard Graphics v3.0

Corel Ventura Publisher

**Standards**

**Tested:**

MIL-STD-1840A

MIL-M-28001A

MIL-R-28002A

### **3. 1840A Analysis**

#### **3.1 External Packaging**

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

#### **3.2 Transmission Envelope**

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### **3.2.1 Tape Formats**

The tape was run through the AFCTN *Tapetool* v1.2.9 utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's *CAPS read1840A* utility without any reported errors.

The tape was read using TI's *Tapetool* v1.0.1 without a reported error.

##### **3.2.2 Declaration and Header Fields**

Twelve (12) errors and twelve (12) notes were reported in the Document Declaration file and data file headers. All of these messages were generated because of an incorrect *dstdocid*. Some value other than "NONE" should have been

inserted here. For the AFCTB, the NONE can be an acceptable value although another value should have been inserted. This value will cause problems in XSoft's *CAPS read1840A* utility, as it uses the *dstdocid* value for sub-directories. If the NONE value had been inserted for two separate documents, the files could have been over written.

*dstdocid*: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid value for '*dstdocid*:'.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - The value must be the  
Destination Organization's Document Number.

The physical structure of tape meets the AFCTB basic requirements, but it could cause problems if delivered with several documents on the tape.

## 4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on this tape.

## 5. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

The Text and DTD files from this document were tested using Exoterica's *XGMLNormalizer* parser. The first pass through the DTD generated an error relating to the public identifier for Latin. In checking the submitted DTD the reference was found to be incorrect and misspelled. The reference is shown below along with the corrected reference. The reference in the submitted DTD was not per the CALS MIL-D-28001A

---

specification. This reference was corrected for the remaining operations for all parsers.

**SUBMITTED**

```
<!ENTITY % ISolat1 PUBLIC "ISO 8879-1986//ENTITIES Latin
1/EN">
```

**CORRECTED**

```
<!ENTITY % ISolat1 PUBLIC "ISO 8879-1986//ENTITIES Added
Latin 1//EN">
```

On two of the other public identifiers, an extra set of quote marks had to be removed.

```
<!ENTITY % ISOnum PUBLIC "ISO 8879-1986//ENTITIES Numeric and Special
Graphic//EN" REMOVED
  "/app/sqps/entities/isonum.ent"> <!ENTITY % ISotech PUBLIC
  "ISO 8879- 1986//ENTITIES General
  Technical//EN" REMOVED
  "/app/sqps/entities/isotech.ent">
```

The next pass through the parser generated three errors, all of which are ambiguous content models. No further operations could be completed because of the errors. The three errors and the parts of the DTD are shown below.

```
C:\XGML\XGMLNORM.EXE --
Error on line 310 in file entities/9352.dtd:
A content model is ambiguous.
For element 'IDINFO'. The input is 'REVNUM'.
```

```
<!ELEMENT idinfo
  (pubno|revnum?|revdate?|copyno?|doctype|
  prtitle|mfr|contractno+|notice|downgrd?|
  pubdate|((chgunum,chgdate)?)|
  ((revnum,revdate)?)*) * >
```

```
C:\XGML\XGMLNORM.EXE --
Error on line 434 in file entities/9352.dtd:
A content model is ambiguous.
```

For element 'STEP1'. The input is 'PARA'.

```
<!ELEMENT step1 - o
      (warning*, caution*, para*, note*, para*, result*, step2*)*>
<!ATTLIST step1      %att; >
```

C:\XGML\XGMLNORM.EXE --  
Error on line 449 in file entities/9352.dtd:  
A content model is ambiguous.  
For element 'SUBPARA1'. The input is 'PARA'.  
<!-- The document prolog is in error. -->

```
<!ELEMENT                subpara1                -
      (%nparcon;, step1*, (para|step1|subpara2| %nparcon;)* ) >
<!ATTLIST subpara1  tocentry      %yesorno;      "0"
                  shortentry     %yesorno;      "0"
                  %att; >
```

The Text and DTD files from the tape were evaluated using another parser available within the AFCTB. In this software are errors which prevent the DTD from parsing. See the Appendix to this report for the log file.

The Text and DTD files from this document were evaluated using Exoterica's Validator parser. This utility reported three (3) errors and fourteen (14) warnings. See the Appendix to this report for the complete error log.

The Text and DTD files from the tape were evaluated using McAfee & McAdam's Sema Mark-it parser. This program reported the same errors as reported above.

The Text and DTD files from the tape were evaluated using the Public Domain sgmls parser. This utility reported the same errors as reported above. See the Appendix for the complete log.

The DTD does not meet the CALS MIL-M-28001A specification, with ambiguous context models being reported by all parsers available in the AFCTB. The miss named public entity also caused problems.

## 6. Raster Analysis

The tape contained nine (9) Raster files. All files were evaluated using the AFCTN *validg4* utility. This program reported that all files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN *calstb.475* viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using ArborText's *g42tiff* utility without a reported error. The resulting files were read into Island Graphics' *IslandPaint* and displayed.

The Raster files were read into Carberry's *CADLeaf* software without a reported error. The images were displayed.

The files were read into IDA's *IGESView* and *IGESView for Windows* and displayed without a reported error.

The files were read into Inset Systems' *HiJaak for Windows* displayed and printed without a reported error.

The files were converted using Inset Systems' *HiJaak for DOS* into an IMG format without a reported error. The resulting files were read into Corel's *Ventura Publisher* and displayed.

The Raster files were converted using Rosetta Technologies' *Prepare* without a reported error. The resulting files were read into Rosetta Technologies' *Preview* and displayed.

The nine (9) Raster files on this tape meet the CALS MIL-R-28002A specification.

## 7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included on this tape.

## 8. Conclusions and Recommendations

The tape from Gateway Conversion was basically correct. The tape could be read properly using the AFCTN *Tapetool* software without any reported tape label errors. The Document Declaration file and all data files had reported errors due to the use of "NONE" for the *dstdocid* record. This may be correct for a delivery to the AFCTB but is unacceptable for contract delivery. The physical structure of the tape is acceptable for the AFCTB.

The DTD had a basic error which required correcting before additional evaluation could be completed. The reference to a public entity set was incorrect. All of the parsers available in the AFCTB reported errors in ambiguous content models. The DTD does not meet the CALS MIL-M-28001A specification.

The nine (9) Raster files included on the tape meet the CALS MIL-R-28002A specification.

The tape does not meet the CALS MIL-STD-1840A requirements because of the errors in the DTD.



## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

Air Force Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release 9 (0)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri May 21 12:04:49 1993

MIL-STD-1840A File Catalog

File Set Directory: C:\CTN129\OVERLAND\SET011

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001G001	DTD	D/00260	02048/000012	Extracted
D001R002	Raster	F/00128	02048/000012	Extracted
D001R003	Raster	F/00128	02048/000015	Extracted

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

D001R009	Raster	F/00128	02048/000003	Extracted
D001R010	Raster	F/00128	02048/000013	Extracted
D001T011	Text	D/00260	02048/000063	Extracted

Catalog Process terminated normally.

---

## 9.2 Tape Evaluation Log

Air Force Air Force CALS Test Network Tape Evaluation - Version 1.2; Release 9 (0)  
Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri May 21 12:04:35 1993

ANSI Tape Import Log

Rewinding tape to load point...

VOL1CALS01

4

Label Identifier: VOL1  
Volume Identifier: CALS01  
Volume Accessibility:  
Owner Identifier:  
Label Standard Version: 4

HDR1D001                    CALS0100010001000000 93140 00000 000000

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier: CALS01  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0000  
Generation Version Number: 00  
Creation Date: 93140  
Expiration Date: 00000  
File Accessibility:  
Block Count: 000000  
Implementation Identifier:

HDR2D0204800260

00

Label Identifier: HDR2  
Recording Format: D  
Block Length: 02048  
Record Length: 00260  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

Number of data blocks read = 1.

EOF1D001 CALS0100010001000000 93140 00000 000001

EOF2D0204800260 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

<<<<< PART OF LOG REMOVED HERE >>>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D001T011 CALS0100010012000000 93140 00000 000063

```
Label Identifier: EOF1
File Identifier: D001T011
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0012
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93140
Expiration Date: 00000
```

File Accessibility:  
Block Count: 000063  
Implementation Identifier:

EOF2D0204800260

00

Label Identifier: EOF2  
Recording Format: D  
Block Length: 02048  
Record Length: 00260  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume CALS01 #####

##### End Of Tape File Set #####

Rewinding tape to load point...

Tape Import Process terminated normally.

---

## 9.3 Tape File Set Validation Log

Air Force Air Force CALS Test Network File Set Evaluation - Version 1.2; Release 9 (0).

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Fri May 21 12:04:49 1993

MIL-STD-1840A File Set Evaluation Log

File Set: SET011

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: Gateway Conversion Technologies, Inc.

srcdocid: T016C1-27-28-2

srcrelid: NONE

chglvl: ORIGINAL

dteis: 19930520

dstsys: Northrop Corp.

dstdocid: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid value for 'dstdocid:'.

\*\*\* NOTE (MIL-STD-1840A; 5.1.1.2) - The value must be the  
Destination Organization's Document Number.

dstrelid: NONE

dtetrn: 19930520

dlvacc: NONE

filcnt: G1,R9,T1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: Technical Publication

doctl: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered  
in Document Declaration File D001.

Found file: D001G001

Extracting DTD Header Records...

Evaluating DTD Header Records...

srcdocid: T016C1-27-28-2

dstdocid: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.4.2) - Invalid value for 'dstdocid:'.

---

\*\*\* NOTE (MIL-STD-1840A; 5.1.4.2) - The value must be the  
Destination Organization's Document Number.

notes: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered  
in DTD File D001G001.

Saving DTD Header File: D001G001.HDR

Saving DTD Data File: D001G001.DTD

Found file: D001R002

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: TO16C1-27-28-2

dstdocid: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.4.4) - Invalid value for 'dstdocid:'.

\*\*\* NOTE (MIL-STD-1840A; 5.1.4.4) - The value must be the  
Destination Organization's Document Number.

txtfilid: W

figid: fig1-1

srcgph: fig1-1

doccls: UNCLASSIFIED

rtype: 1

rorient: 000,270

rpelcnt: 001856,001712

rdensty: 0300

notes: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered  
in Raster File D001R002.

Saving Raster Header File: D001R002.HDR

Saving Raster Data File: D001R002.GR4

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Found file: D001T011

Extracting Text Header Records...

Evaluating Text Header Records...

srcdocid: TO16C1-27-28-2

dstdocid: NONE

\*\*\* ERROR (MIL-STD-1840A; 5.1.4.1) - Invalid value for 'dstdocid:'.

\*\*\* NOTE (MIL-STD-1840A; 5.1.4.1) - The value must be the  
Destination Organization's Document Number.

txtfilid: W

doccls: UNCLASSIFIED

notes: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered  
in Text File D001T011.

Saving Text Header File: D001T011.HDR

Saving Text Data File: D001T011.TXT

Evaluating numbering scheme...

No errors were encountered during numbering scheme evaluation.

Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification.

File Count verification complete.

A total of 12 error(s), 0 warning(s), and 12 note(s) were  
encountered in Document D001.

A grand total of 12 error(s), 0 warning(s), and 12 note(s) were  
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

## 10. Appendix B - Detailed SGML Analysis

### 10.1 Parser Log

SGML Document Type Definition Parser  
An SGML System Conforming to  
International Standard ISO 8879  
Standard Generalized Markup Language

Log file: '9352.LOG'  
SDO File: 'ctnddecl.sdo'  
Namecase General is yes.  
Namecase Entity is no.  
Parsing DTD file: '9352.dtd'

<!DOCTYPE DOCIM Parsing DOCTYPE DOCIM

```
<!ELEMENT note      - o (para+|%list;)>
<!ATTLIST note      type      CDATA      #IMPLIED
      XREFID      idref DTD0137: Incorrect token 'idref'.
Parser Ignoring Input Up To Next MDO.
In declaration: '<!ATTLIST'.
In declaration: '<!DOCTYPE'.
in entity 'list'
in line 353 in file '9352.dtd'
      #IMPLIED
      %att;>
```

```
<!ENTITY bull DTD0143: Attempt to declare general entity name 'bull'
more than once denied.
In declaration: '<!ENTITY'.
In declaration: '<!DOCTYPE'.
in entity 'secur'
in line 585 in file '9352.dtd'
```

SDATA "[bull ]">

```
<!ENTITY lt DTD0143: Attempt to declare general entity name 'lt'
more than once denied.
In declaration: '<!ENTITY'.
In declaration: '<!DOCTYPE'.
in entity 'secur'
in line 595 in file '9352.dtd'
```

SDATA "[lt ]">  
]>

DTD0096: The generic ID DOCNO has not been used in any content

---



model, inclusion, or as a doctype element.  
DTD0096: The generic ID EQPTTYPE has not been used in any content  
model, inclusion, or as a doctype element.  
DTD0096: The generic ID HCI has not been used in any content  
model, inclusion, or as a doctype element.  
DTD0096: The generic ID HRULE has not been used in any content  
model, inclusion, or as a doctype element.  
DTD0096: The generic ID MODELNO has not been used in any content  
model, inclusion, or as a doctype element.  
DTD0096: The generic ID PHASE has not been used in any content  
model, inclusion, or as a doctype element.  
DTD0096: The generic ID SUPEQP has not been used in any content  
model, inclusion, or as a doctype element.  
DTD0096: The generic ID SUPPLIES has not been used in any content  
model, inclusion, or as a doctype element.

DTD does not conform to ISO 8879 standard due to these errors:

Uncorrectable syntax error count: 1

.DTO file not created due to parsing errors.

Program status code: 5.

## 10.2 Exoterica XGMLNormalizer Parser

C:\XGML\XGMLNORM.EXE --  
Error on line 310 in file entities/9352.dtd:  
A content model is ambiguous.  
For element 'IDINFO'. The input is 'REVNUM'.

C:\XGML\XGMLNORM.EXE --  
Error on line 434 in file entities/9352.dtd:  
A content model is ambiguous.  
For element 'STEP1'. The input is 'PARA'.

C:\XGML\XGMLNORM.EXE --  
Error on line 449 in file entities/9352.dtd:  
A content model is ambiguous.  
For element 'SUBPARA1'. The input is 'PARA'.  
<!-- The document prolog is in error. -->

---

## 10.3 Exoterica Validator Log

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning**:
  An element with mixed content should permit data characters ("PCDATA")
  everywhere.
  The element being declared is "ENTRY".
  (((#PCDATA|xref|change|emphasis|esd|hcp|ocp|
    ^^^^^^
-->
<!-- **Error** in "9352.sgm", line 388:
  A content model must not be ambiguous.
  For the declared element "IDINFO", the element "REVNUM" is ambiguous in the
  content model.
      ((revnum,revdate)?)+)* >
      ^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("PCDATA")
  everywhere.
  The element being declared is "NOTICE".
  (((#PCDATA|xref|change|emphasis|esd|hcp|ocp|
    ^^^^^^
-->
<!-- **Error** in "9352.sgm", line 509:
  A content model must not be ambiguous.
  For the declared element "STEP1", the element "PARA" is ambiguous in the
  content model.
  <!ELEMENT step1 - o (warning*,caution*,para*,note*,para*,result*,step2*)*>
      ^
-->
<!-- **Error** in "9352.sgm", line 524:
  A content model must not be ambiguous.
  For the declared element "SUBPARA1", the element "PARA" is ambiguous in the
  content model.
  <!ELEMENT subpara1 - o (%nparcon;;step1*,(para|step1|subpara2|nparcon;)*
      /\
-->
<!-- **Warning** in "9352.sgm", line 652:
  A general entity name has been declared more than once.
  The entity is "bull".
  <!ENTITY bull SDATA "[bull  ]">
      ^^^^^
-->
<!-- **Warning** in "9352.sgm", line 662:
  A general entity name has been declared more than once.
```

---

---

```
The entity is "lt".
<!ENTITY lt SDATA "[lt    ]">
    ^^

-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "DOCNO".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "EQPTTYPE".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "HCI".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "HRULE".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "MODELNO".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "PHASE".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "QUANTITY".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "SPECIFICATION".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
```

---

```
    The element is "SUPEQP".
-->
<!-- **Warning** in "9352.sgm", line 663:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "SUPPLIES".
-->
<!-- 3 errors and 14 warnings reported. -->
```

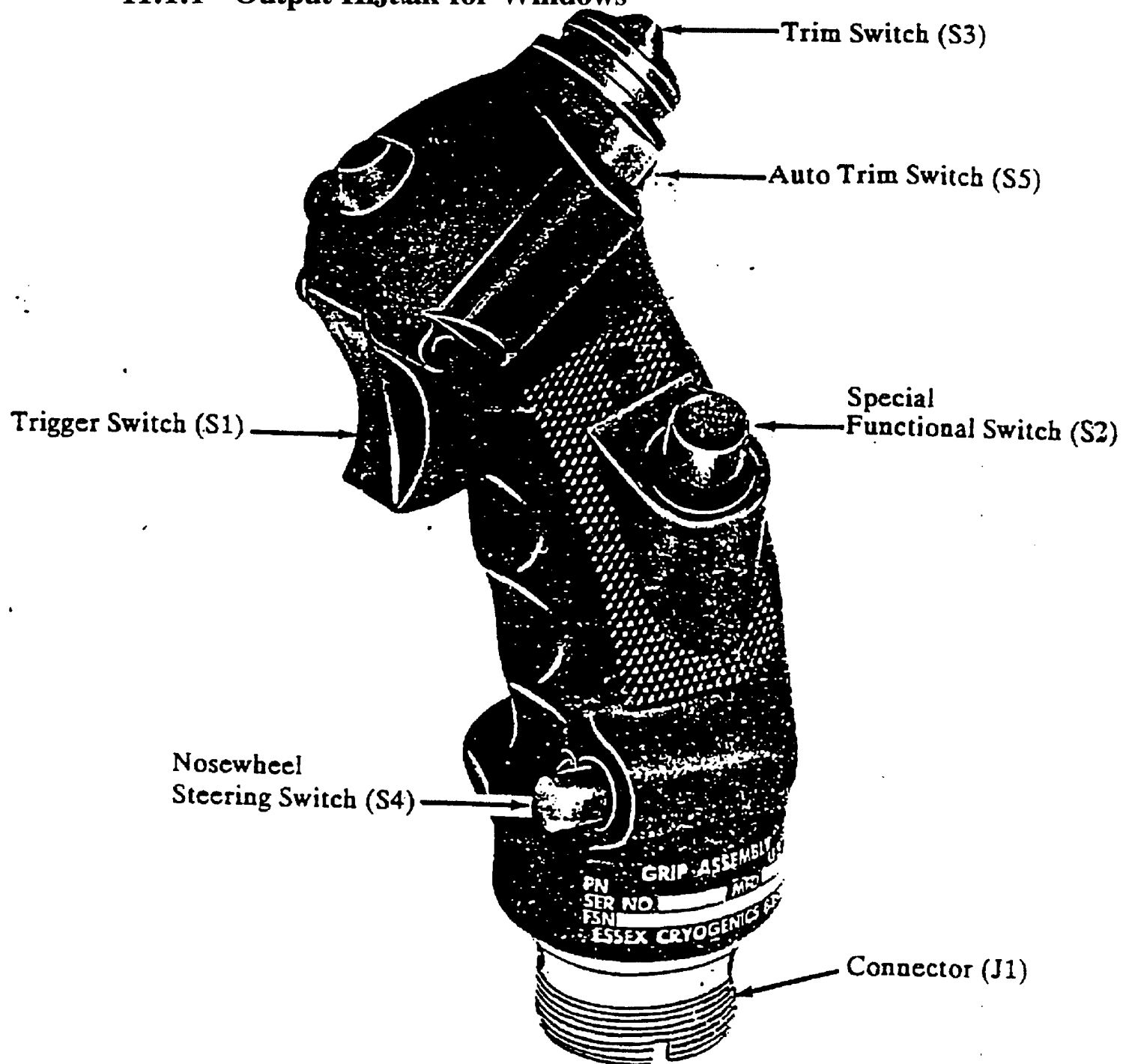
## 10.4 Public Domain sgmls Log

```
sgmls: SGML error at 9352.dtd, line 332 in declaration parameter 4:
    Content model is ambiguous
sgmls: SGML error at 9352.dtd, line 453 in declaration parameter 4:
    Content model is ambiguous
sgmls: SGML error at 9352.dtd, line 468 in declaration parameter 4:
    Content model is ambiguous
TOTALCAP 151017/200000
  ENTCAP 13120/200000
ENTCHCAP 6983/200000
  ELEMCAP 3616/200000
  GRPCAP 25408/200000
EXGRPCAP 192/200000
  EXNMCAP 352/200000
  ATTCAP 78272/200000
ATTCHCAP 914/200000
AVGRPCAP 22080/200000
  NOTCAP 32/200000
NOTCHCAP 48/200000
```

## 11. Appendix D - Detailed Raster Analysis

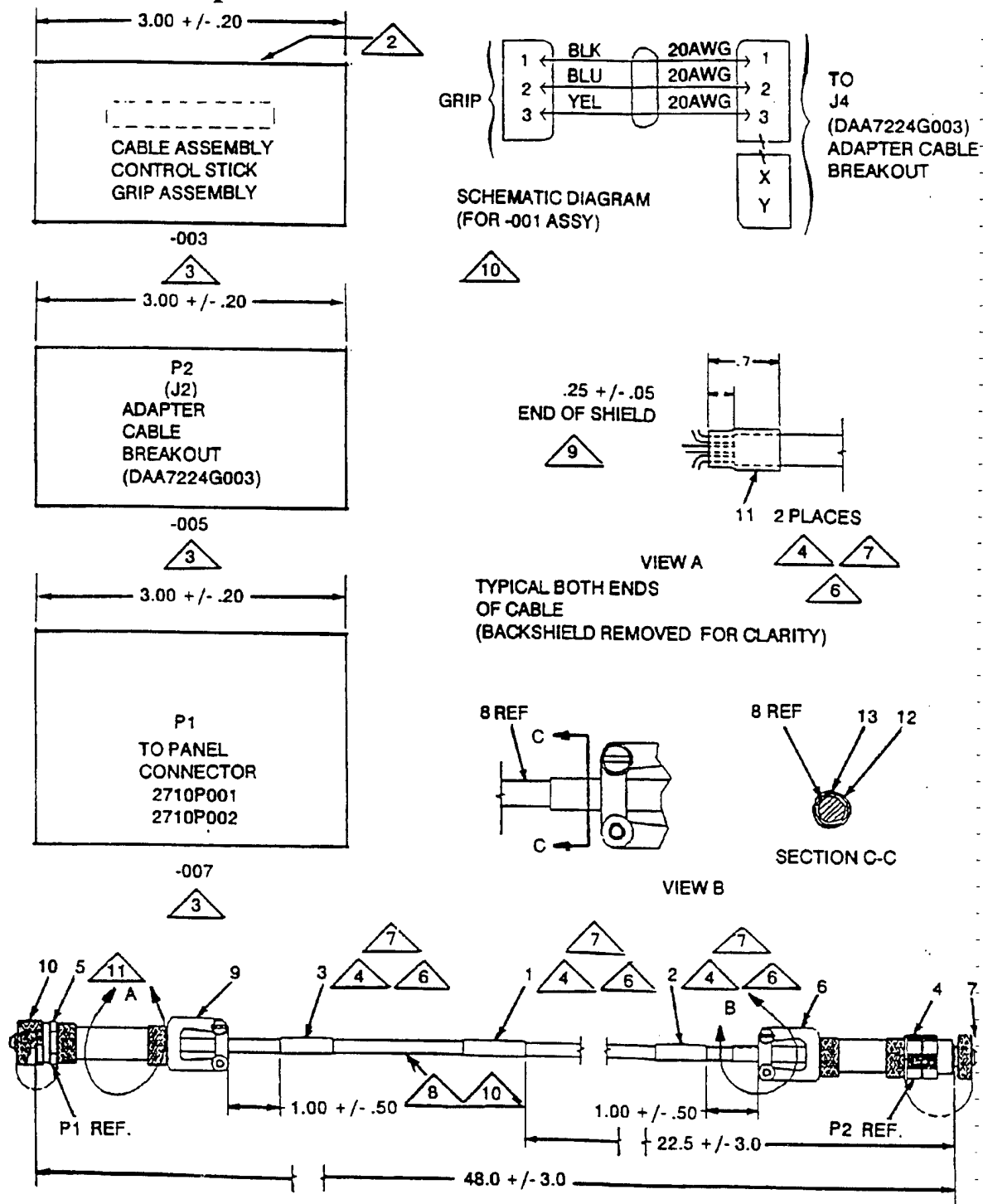
### 11.1 File D001R002

#### 11.1.1 Output HiJaak for Windows



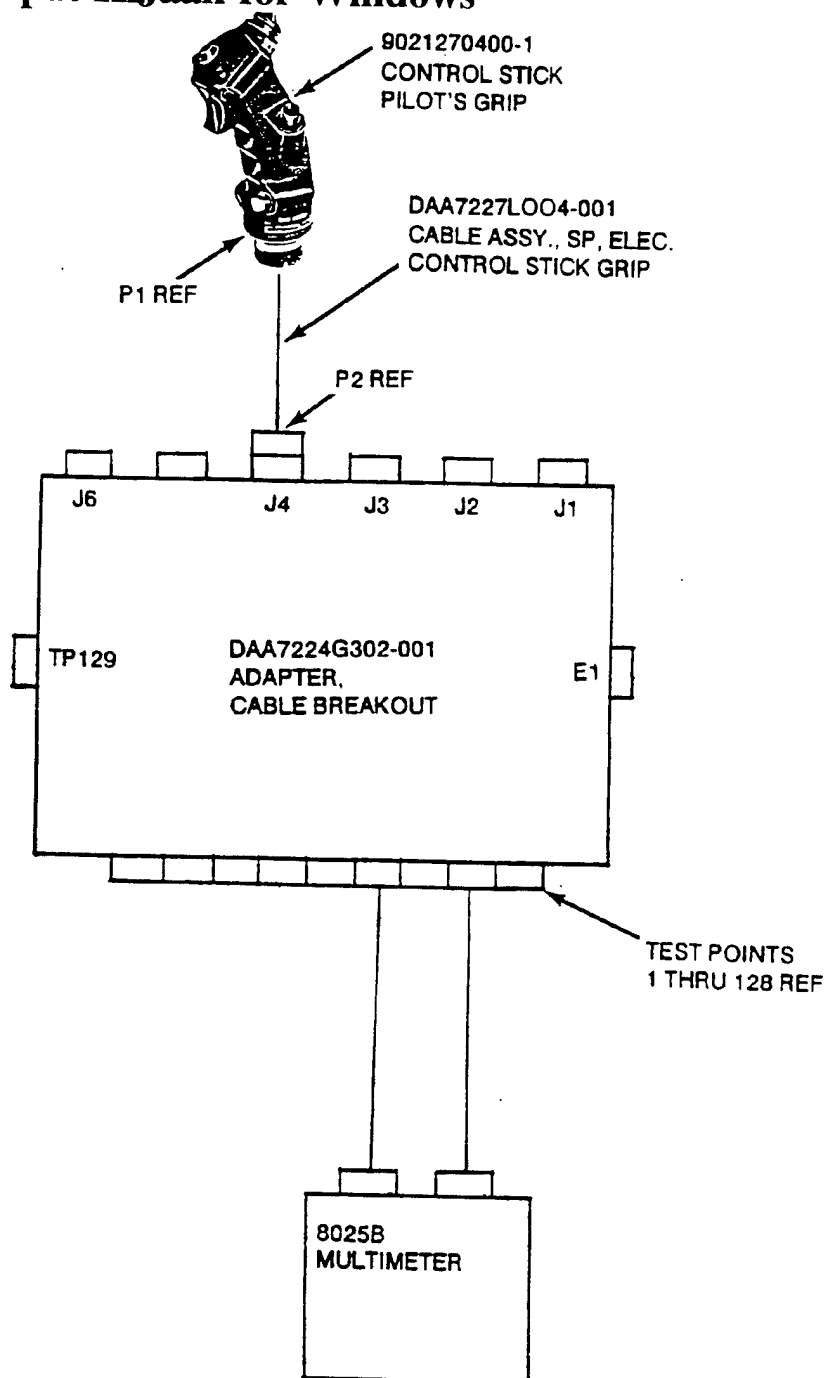
## 11.2 File D001R003

### 11.2.1 Output HiJaak for Windows



## 11.3 File D001R004

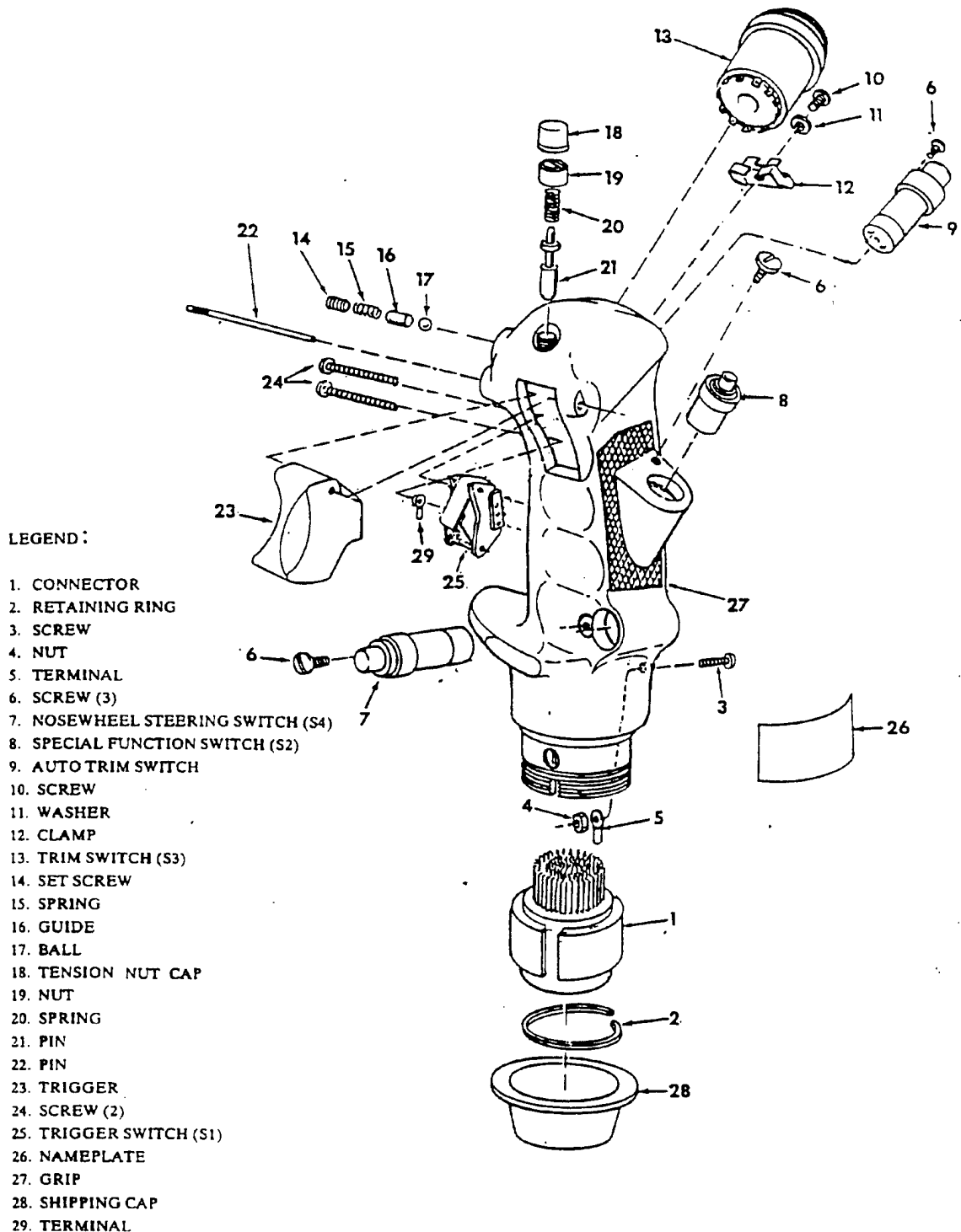
### 11.3.1 Output HiJaak for Windows



CONNECT  
PER TEST  
REQUIREMENTS

## 11.4 File D001R005

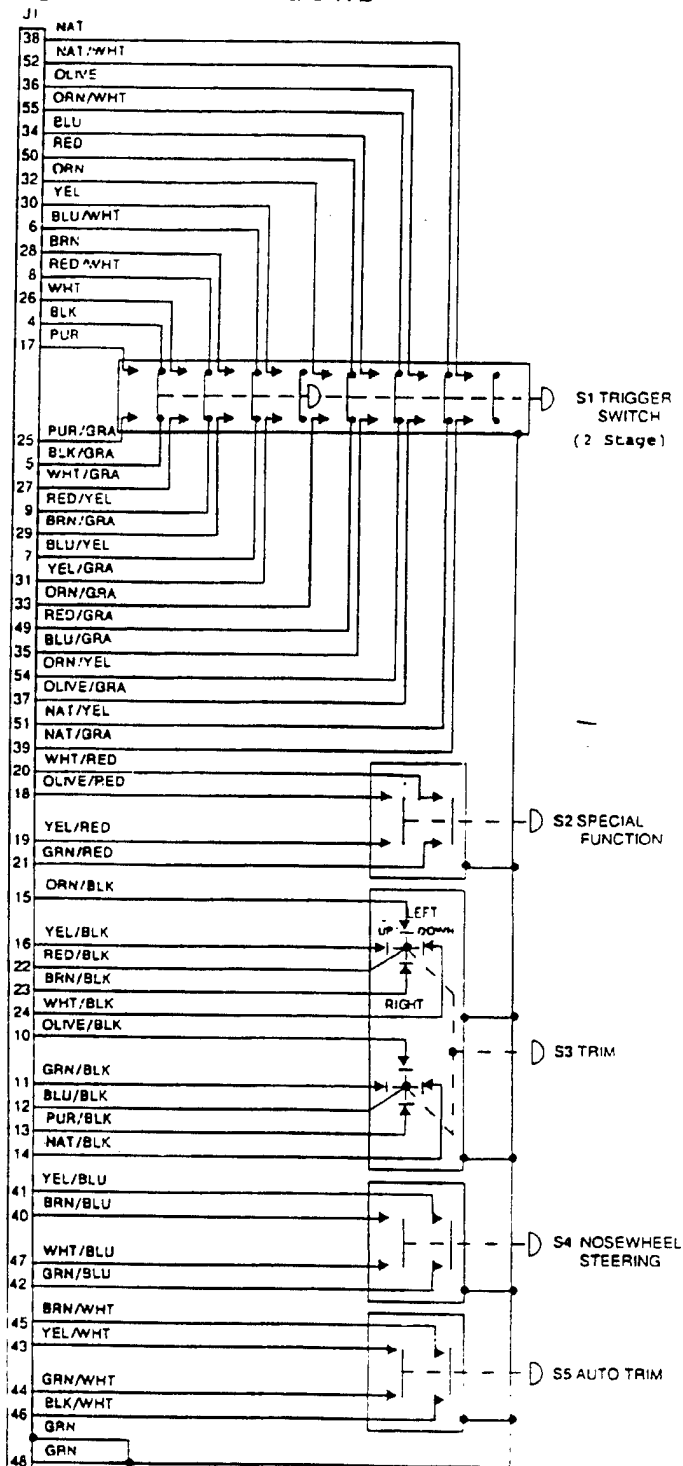
### 11.4.1 Output HiJaak for Windows





## 11.5 File D001R006

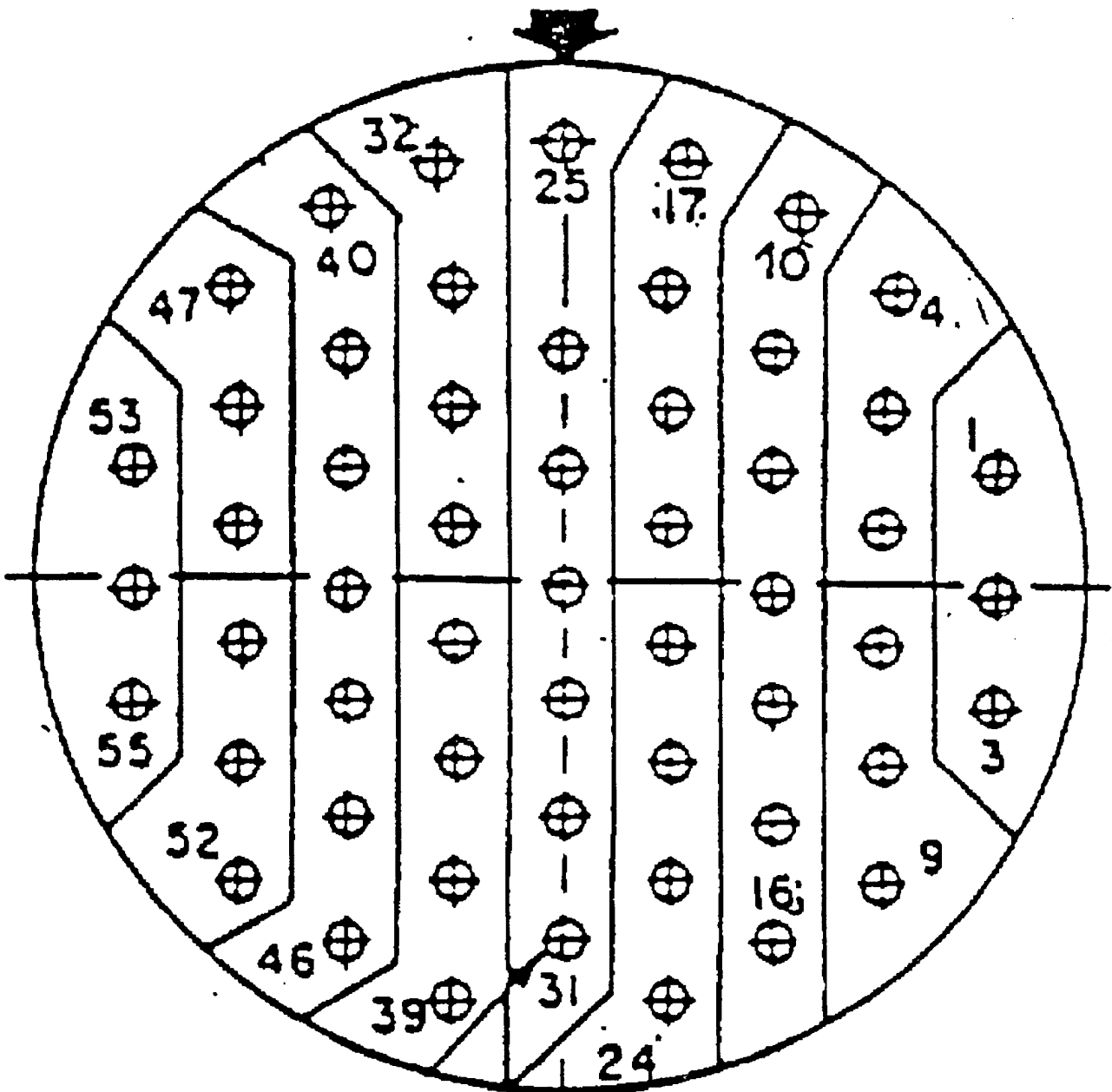
### 11.5.1 Output HiJaak for Windows



## 11.6 File D001R007

### 11.6.1 Output HiJaak for Windows

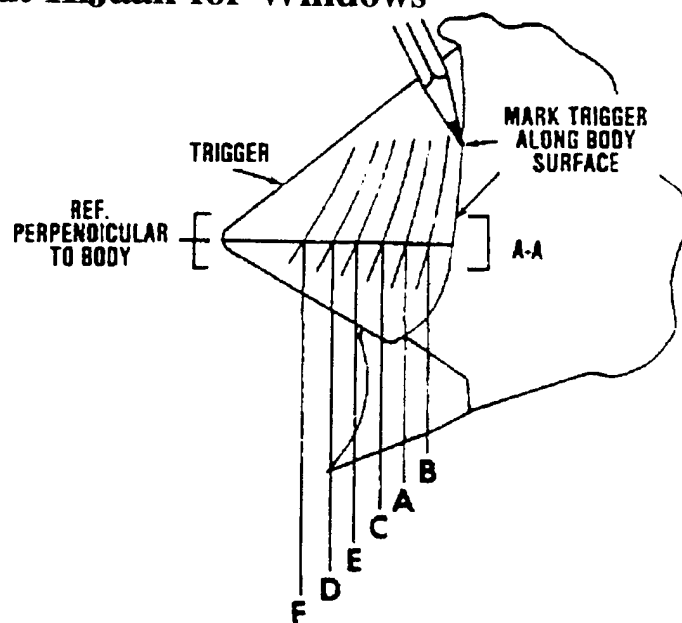
#### KEYWAY



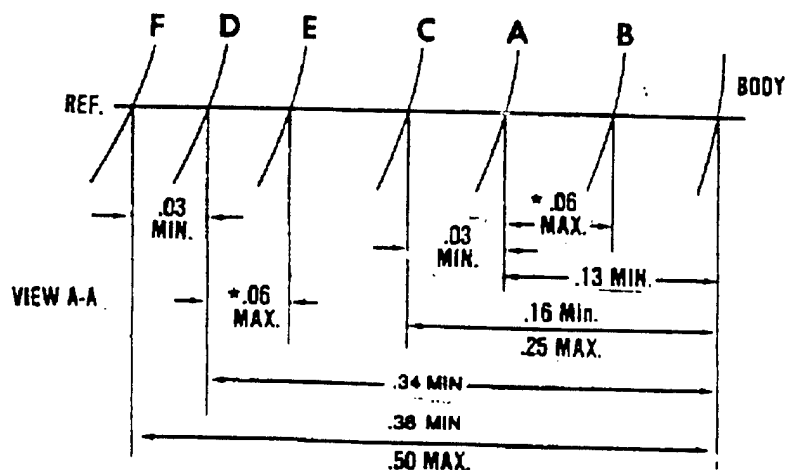
(Solder Pot Side)

## 11.7 File D001R008

### 11.7.1 Output HiJaak for Windows



- A ON POSITION #1 SWITCH
- B OFF POSITION #1 SWITCH (PRETRAVEL)
- C MECHANICAL DETENT
- D ON POSITION #2 SWITCH
- E OFF POSITION #2 SWITCH
- F STOP

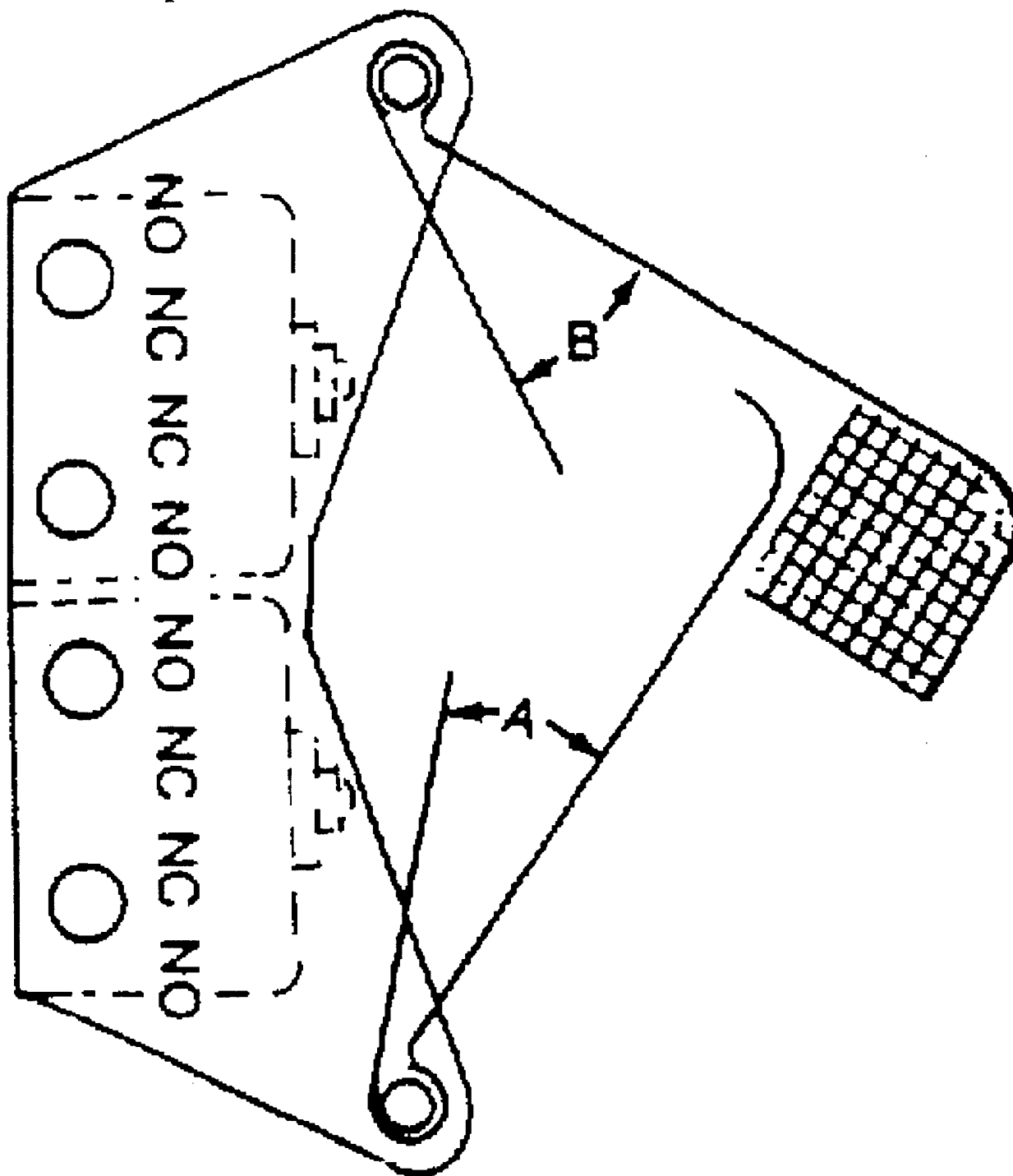


MEASUREMENTS ARE IN INCHES

\* See Note after Step 11.

## 11.8 File D001R009

### 11.8.1 Output HiJaak for Windows



## 11.9 File D001R010

### 11.9.1 Output HiJaak for Windows

